



جمهورية مصر العربية  
المركز الديموجرافي بالقاهرة

أوراق بحثية رقم (٣٦)

الزواج والخصوبة في دول مجلس التعاون الخليجي  
تأثير سياسات الأسرة والخصوبة

إعداد

لى بيمن \*

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## الزواج والخصوبة في دول مجلس التعاون الخليجي

تتناول هذه الدراسة أثر الزواج على الخصوبة في دول مجلس التعاون الخليجي الست وهي دولة البحرين وعمان والامارات العربية المتحدة والكويت والمملكة العربية السعودية وقطر . وتعتمد هذه الدراسة أساساً على البيانات المتاحة من خلال مجموعة مسح صحة الطفل التي أجريت في هذه الدول في أواخر الثمانينات والتي أتاحت بيانات صالحة للمقارنة لكل هذه الدول .

وقد خلصت الدراسة إلى النتائج الآتية :

- ١ - على الرغم من تشابه الخصائص الاقتصادية والاجتماعية لدول مجلس التعاون الخليجي إلا أنه لوحظ أن معدلات الخصوبة تختلف اختلافاً بيناً بين هذه الدول حيث حققت عمان والسعودية أعلى معدلات الخصوبة وحققت البحرين أقلها .
- ٢ - لوحظ أن تأثير العمر عند الزواج يرتبط ارتباطاً وثيقاً بالعوامل الاقتصادية والاجتماعية الأخرى وأهمها التعليم ومحل الإقامة .
- ٣ - بالإضافة إلى تأثير الزواج على الخصوبة في هذا الإقليم فإن استخدام وسائل تنظيم الأسرة يلعب دوراً هاماً في خفض الخصوبة في بعض هذه الدول وبخاصة في البحرين وقطر والكويت .
- ٤ - تقديرات الخصوبة التي تم تقديرها من خلال البيانات المستخدمة في الدراسة تتوافق إلى حد كبير مع تقديرات المنظمات الدولية مثل الـ ESCWA والبنك الدولي .
- ٥ - لا يمكن أن نقطع بأن نتائج المسوح التي أجريت في هذه الدول دقيقة إلى حد كبير ولكن تعد إلى حد ما جيدة في سبيل توفير قاعدة بيانات للمخططين في هذه الدول .

## تمهيد

ينتهج المركز الديموجرافى بالقاهرة فى اصدار مطبوعاته سياسته نشر الابحاث الجديدة ذات المستوى الرفيع والتي تسهم فى دعم المادة العلمية فى الدراسات السكانية والتي تهتم علماء الديموجرافيا . وتشمل المطبوعات الصادره عن المركز الابحاث التي يتم اجراؤها فى المجالات الاجتماعية والقوه البشريه والاحصاءات الحيويه والوفيات والبيئه والخصوبة والتنميه وغيرها من الموضوعات المتعلقة بالسكان والصحة .

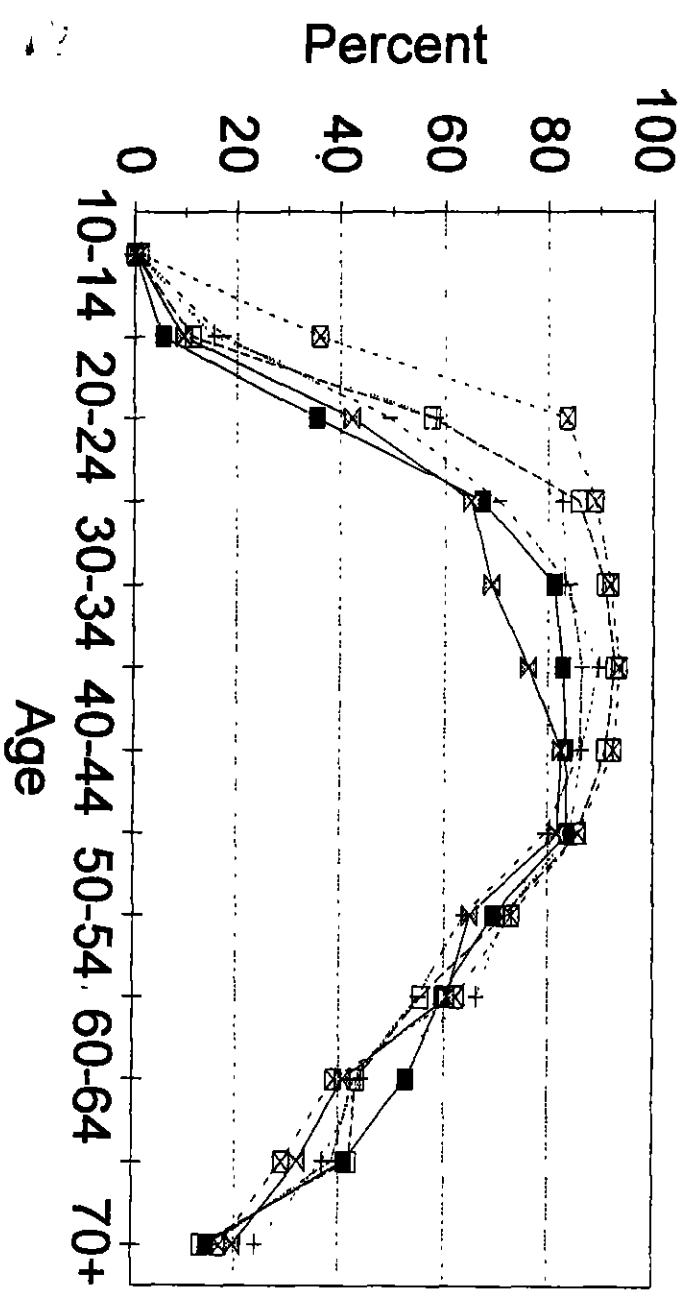
ويتم فحص وتقييم البحوث والدراسات المقدمه بواسطة نخبه من الاساتذه المتخصصين فى المجالات السكانيه المختلفه قبل نشرها ، ويسر المركز فى هذا الصدد أن يدعو الساده الاساتذه والباحثين الى التقدم بأبحاثهم والتطورات النظرية والتحسينات (الاضافات) التي يقترحون ادخالها على النماذج او الاساليب وتقييم السياسات وتطبيق المبادئ او الاساليب وتقييم البيانات الديموجرافيه والدراسات المقارنه والتاريخيه الخاصه بالدول المتقدمه والناميه ، كما أن المركز يرحب بما يتقدم به المتخصصين فى المجالات السكانيه من ابحاث مختصرة كمذكرات بحثيه .

والله ولى التوفيق

أ.د. هشام مخلوف

مدير المركز

**Figure 2**  
**Proportions Currently Married by Age**



**Figure 1**  
**Marital Age Specific Fertility Rates**

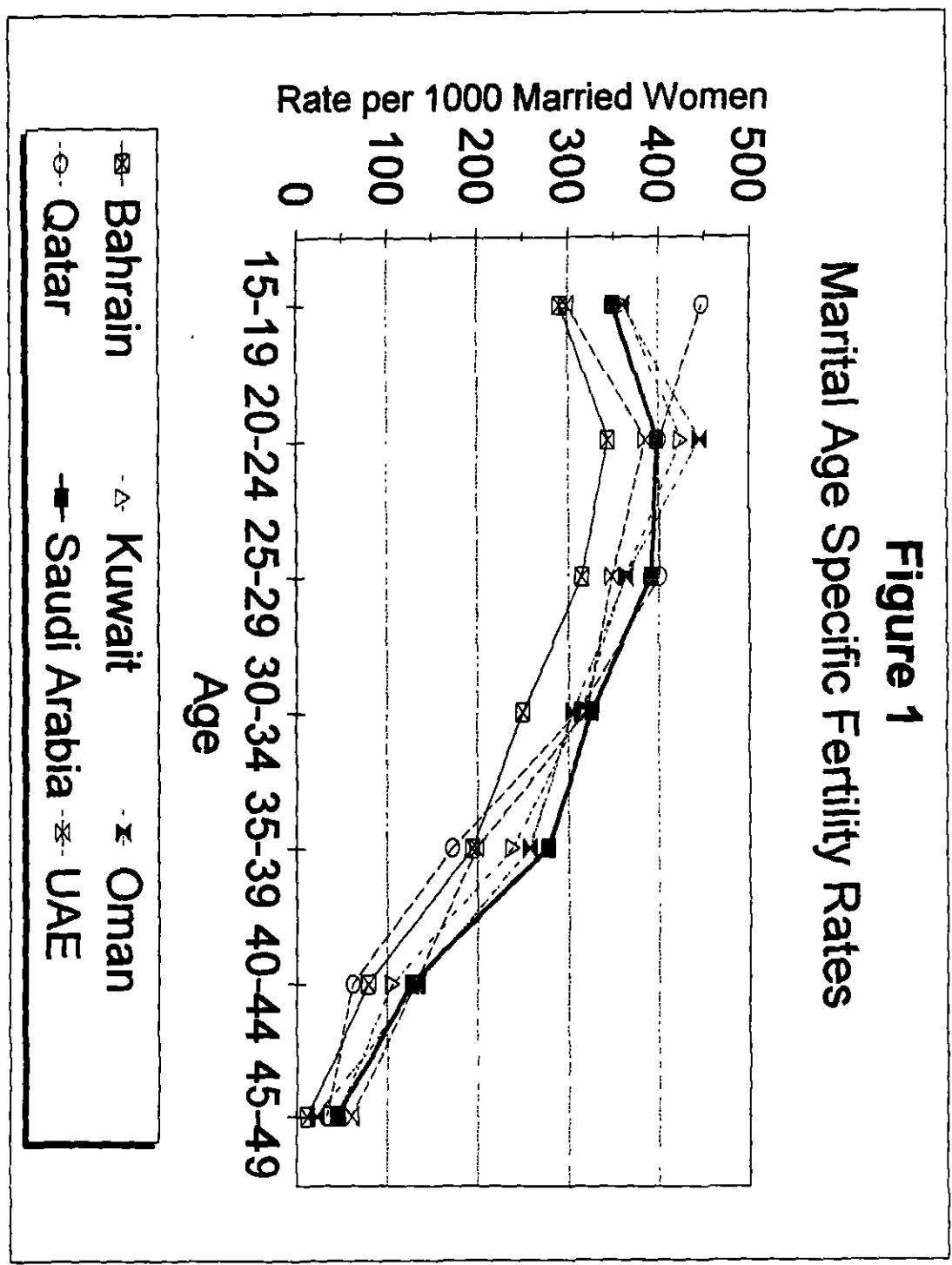


Table 5. Index of Relative Reduction of Potential Fertility Due to Variations in Age and Proportions Married.	
Country	Index Value
Bahrain	0.565
Kuwait	0.726
Oman	0.830
Qatar	0.491
Saudi Arabia	0.675
United Arab Emirates	0.713

**Table 4**  
**Age Specific Fertility Rates, Marital Age Specific Fertility Rates, Total Fertility Rates (TFR),**  
**and Total Marital Fertility Rates (MTFR), GCC Countries, Circa 1988**

Age	Country					
	Bahrain	Kuwait	Oman	Qatar	Saudi Arabia	United Arab Emirates
	Age Specific Fertility Rates (Per 1000 Women) and Total Fertility Rates					
15-19	16	42	134	43	55	54
20-24	124	255	389	169	236	201
25-29	222	326	343	261	328	259
30-34	214	300	297	215	273	288
35-39	176	231	255	131	251	191
40-44	75	103	133	51	111	128
45-49	11	43	22	27	37	59
TFR	4.19	6.5	7.84	4.49	6.46	5.91
Marital Ages Specific Fertility Rates (Per 1000 Married Women and Marital Total Fertility Rates)						
15-19	292	363	361	448	349	299
20-24	344	425	446	401	398	386
25-29	315	363	364	401	391	348
30-34	250	314	305	312	326	320
35-39	194	239	258	172	278	199
40-44	79	106	134	62	127	131
45-49	12	45	22	33	45	61
MTFR						
15-49	7.33	9.28	9.45	9.15	9.57	8.72
20-24	5.87	7.43	7.65	6.91	7.83	7.22



Table 3

Calculated Number of Males and Females Enumerated in the Household Survey and the Sex Ratio, GCHS, by Age and Country

Age	Bahrain			Kuwait			Oman		
	Male	Female	Sex Ratio	Male	Female	Sex Ratio	Male	Female	Sex Ratio
0-4	1882	1821	103.4	3204	3168	101.1	2517	2392	105.2
5-9	1715	1693	101.3	2548	2592	98.3	2237	2125	105.3
10-14	1573	1577	99.7	2310	2213	104.4	1691	1614	104.8
15-19	1328	1295	102.5	1595	1516	105.2	915	975	93.8
20-24	1405	1334	105.4	969	1137	85.2	534	673	79.3
25-29	1057	1154	91.6	805	1152	69.9	890	801	111.1
30-34	825	911	90.6	760	970	78.3	839	662	126.8
35-39	722	667	108.3	700	788	88.9	737	592	124.5
40-44	438	513	85.5	537	424	126.4	610	372	164.2
45-49	400	449	89.0	417	243	172.0	445	267	166.6
50-54	387	372	104.0	298	349	85.5	381	209	102.6
55-59	374	385	97.2	224	182	122.9	203	372	76.2
60-64	309	244	127.0	179	167	107.2	242	267	115.6
65-69	206	180	114.9	134	91	147.5	153	209	164.2
70-74	116	103	113.1	104	91	114.7	114	93	109.5
75+	155	128	120.6	119	76	157.3	203	104	292.0
Total	12892	12824	100.5	14903	15159	98.3	12711	11587	107.7
	Qatar (Nationals Only)			Saudi Arabia			United Arab Emirates		
0-4	836	779	107.2	5542	5408	102.5	3383	3380	100.1
5-9	707	774	94.6	5161	5019	102.8	3157	3119	101.2
10-14	810	292	102.2	4310	4183	103.0	2646	2495	106.1
15-19	810	779	103.9	3401	3436	99.0	1928	1972	97.8
20-24	726	683	106.4	2023	2599	77.8	1531	1992	76.9
25-29	643	606	106.2	1554	2301	67.6	1361	2072	65.7
30-34	489	670	72.9	1144	1554	73.6	888	1288	69.0
35-39	354	464	67.2	1232	1524	80.8	888	1026	86.6
40-44	244	245	99.8	880	1046	84.1	605	523	115.6
45-49	193	206	93.5	997	1016	98.1	605	402	150.3
50-54	186	161	115.7	850	478	177.9	454	563	80.5
55-59	103	103	99.8	586	388	151.0	397	402	98.6
60-64	135	97	139.7	704	329	214.1	359	282	127.5
65-69	64	26	249.5	293	179	163.6	284	181	156.6
70-74	64	39	166.3	645*	418*	154.2	208	181	114.8
75+	64	45	142.5				227	241	93.9
Total	6428	6442	99.8	29322	29877	98.1	18902	20120	93.9

\*70 and older

**Table 2**  
**Dates of the Surveys and Samples Sizes, GCHS Surveys, by Country**

	Country					
	Bahrain	Kuwait	Oman	Qatar+	Saudi Arabia	United Arab Emirates
<b>Dates</b>	Feb/Mar, 1989	Mar/Apr 1987	Nov/Feb 1988/89	Nov/Dec 1987	Mar/May 1987	Mar/Apr 1987
<b>Households Selected</b>	3714	3740	4068*	4194	9061	6083
<b>Interviewed</b>	1711	3411	3867	3868	8044	5248
<b>Eligible Women</b>						
<b>Selected</b>	3658	4233	3617	3958	8563	4892
<b>Interviewed</b>	3623	4175	3555	3918	8492	4832
<b>Child age 5 or younger</b>	3668	7687	6907	4921	13332	7895

**Notes:**

\*Initially 5,000 households were selected in the sample, but a large number of households were vacant. The number reported represents the number of occupied households.

+ Qatar is the only one of the five countries that included expatriates in the sample. All other samples represent national populations only.

**Table 1**  
**Reported Total Fertility Rates, GCC Countries**

Reference Date	Bahrain	Kuwait	Oman	Qatar	Saudi Arabia	United Arab Emirates
1975-80(a)	5.23	5.89	7.17	6.00	7.28	5.66
1985-90(a)	4.08	3.94	7.17	4.80	6.80	4.82
1988 (b)	5.8	6.2	6.9	5.3	6.80	6.70

Sources: (a) United Nations Social and Economic Commission for West Asia, *Statistical Abstract of the Region of the Economic and Social Commission for Western Asia 1981-1990* (Amman, United Nations, 1992); (b) Economic and Social Commission for Western Asia, *Population Situation in the ESCWA Region, 1990* (Amman, ESCWA, 1992)

children married woman would have by age 49 if married between ages 15 and 19.

21. While not germane to the argument presented here it is interesting to note the rapid, simultaneously decline in the proportions currently marriage right after the end of the normal childbearing year of life.

22. The term "singulate mean age of marriage" refers to a standard technique for estimating the mean age at marriage from the proportion of the population single in the age groups 15 through 49.

23. John Bongaarts, "A Framework for Analyzing the Proximate Determinants of Fertility," *Population and Development Review*, 4(1978).

24. Eickelman, "Fertility and Social Change", p. 660.

25. The World Bank, Social Indicators of Development (Socio-economic Time-Series data disk), Washington, D.C., International Bank for Reconstruction and Development/The World Bank, 1990/1991.

number of fertility measures reported in the published volume.

16. A detailed study of the 1975 Kuwait census showed a deficit of males in the age groups 15 through 29. A total of 4,561 Kuwaiti males in the age group 20-29 were reported to be abroad, but the number is insufficient to account for the deficit. United Nations Economic Commission for West As, *The Population Situation in the ECWA Region, 1980:Kuwait* (Beirut, ECWA, 1980).

17. Only Bahrain and Oman include data on polygynous marriages. In Oman, 9.6 percent of the women in urban areas are in polygynous marriages, 14.5 percent in semi-urban areas, and 10.0 percent in rural areas. In Bahrain the figures are 5.2 percent in urban areas and 13.8 percent in rural areas.

18. Rashid *Kuwait*, p.3.

19. William Brass, *Methods of Estimating Fertility from Limited and Defective Data* (Chapel Hill, North Carolina, Carolina Population Center, Laboratories for Population Studies, 1975).

20. The age specific fertility rates are the number of births to women in a specific age group expressed as a rate per 1000 women in that age group. The marital age specific fertility rate is for married women only in each age group. The total fertility rates denoted as TFR is the sum of the age specific fertility rates multiplied by 5 to adjust for the fact that the data are aggregated into five year age categories. MTFR (marital total fertility rate) is calculated in the same fashion. TFR may be interpreted as the average number of children a woman would have by the time she is 49 years of age, and the MTFR is the average number

10. Samir (ed), *Saudi Arabia*, p.3.
11. The studies had a broad range of financial and technical support from the AGFund/UN Development Organization, United Nations Fund for Population Activities (UNFPA), UNICEF, and WHO.
12. Following closely on the plan for the GCC surveys, the League of Arab States initiated a similar series in other Arab countries, the Pan Arab Project for Child Development, known as the PAPChild Surveys.
13. DHS developed a "core" questionnaire which is common to all surveys of this type. In addition separate sets of questions, modules, were developed for specific topics. The number of modules added to the core questionnaire varied from country to country. A few of the GCC countries included a family planning module dealing with knowledge and use of contraception, but most did not.
14. Only the Saudi Arabia report fails to provide a table detailing the educational characteristics of population enumerated in the household survey. Each of the other five reports include a table of literacy/illiteracy by age and sex.
15. There are some questions regarding the source of some of the tables. Each published report includes an appendix with the questionnaires used. There is no evidence that the pregnancy history questionnaire was used in Saudi Arabia. One must assume that this part of the questionnaire was simply not included in the published report. Without the information contained in the pregnancy history it would have been impossible to compute accurately a

*Situation in the ESCWA Region* (Amman, ESCWA, 1990).

6. Where major differences appear in the published data, one set may reflect rates for national populations only and another set may include expatriates. For example, if all of the female domestic servants in Kuwait are included in the calculations of age specific fertility rates, the rates will be artificially very low because these women have left their families behind

7. The full citations for these publications are presented below. For simplicity, further references will be by name of the senior editor and country name only. Samir Farid (ed).

*Bahrain Child Health Survey*, (Manama, Bahrain, Ministry of Health, State of Bahrain, 1992);

Rashid Al Rashoud and Samir Farid (eds), *Kuwait Child Health Survey*, (Kuwait, Ministry of Health, State of Kuwait, 1991); Murtadha J. Suleiman, Ahmed Al-Ghassany and Samir Farid

(eds.), *Oman Child Health Survey*, Muscat, Oman, Ministry of Health, State of Oman, 1992);

Abdul-Jalil Salman, Khalifa Al-Jaber, and Samir Farid (eds), *Qatar Child Health Survey*,

(Doha, Qatar Ministry of Health, State of Qatar, 1991); Samir Farid and Yagob Al Mazrou

(eds). *Saudi Arabia Child Health Survey* (Riyad, Saudi Arabia, Ministry of Health, Kingdom

of Saudi Arabia, 1991); Abdul-Wahab Al-Muhaideb, Abdul-Ghaffar Abdul-Ghafour, and

Samir Farid (eds), *United Arab Emirates Child Health Survey* (United Arab Emirates, Ministry of Health, no date.)

8. Each of the reports with the exception of Bahrain include a statement indicating that high fertility is "desireable" or "encouraged."

9. Abdul-Jalil (ed.), *Qatar*, p. 3.

## ENDNOTES

1. Without reference to the recent decline of fertility in Egypt, Schellekens, for example, in an article dealing with fertility in 19th century England ends with "fertility rates remain high in Egypt." Jona Schellekens, "Wages, Secondary Workers, and Fertility: A Working-Class Perspective of the Fertility Transition in England and Wales," *Journal of Family History* 18(1993) p. 11.
2. Christine Eickelman, "Fertility and Social Change in Oman: Women's Perspectives" *The Middle East Journal* 47(1993) p. 665.
3. During the 1970s, fertility surveys organized by the International Institute of Statistics from offices in London were conducted in Egypt, Jordan, Syria, and Morocco. These surveys, known as the World Fertility Surveys (WFS) have been succeeded by the Demographic and Health Surveys, originally funded by USAID and managed in large part by Micro International, Columbia, Maryland. Additional funding has been provided by a wide range of organizations. DHS surveys have been conducted in Egypt, Jordan, Morocco, Tunisia, and the Sudan.
4. Economic and Social Commission for Western Asia, *Population Situation in the ESCWA Region: 1990* (Amman, ESCWA, 1992).
5. United Nations Social and Economic Commission for West Asia, *Statistical Abstract of the Region of the Economic and Social Commission for West Asia 1981-1990* (Amman, United Nations, 1992), and Economic and Social Commission for South Western Asia, *Population*



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the *Statistical Abstract* (3.4 and 3.9 respectively). The GCHS results for Bahrain (4.19) are close to those of the ESCWA's *Statistical Abstract* (4.08), but lower than World Bank estimates (4.7) and ESCWA's *Population Situation* report 5.8. The ESCWA and GCHS rates for Qatar range from 4.49 (GCHS) to 5.3 and the World Bank estimate is 5.6. The estimates for the United Arab Emirates range from 4.82 (*Statistical Abstract*) to 6.7 (*Population Situation*) with the GCHS estimates falling near mid-range: 5.91.

It is not possible to conclude that the GCHS surveys have provided fully accurate estimates of fertility in the region. The results do, however, provide strong evidence for at least one conclusion, and at the same time pose certain important questions which one would anticipate would be the focus of future analysis of the data. The one conclusion is that much of the variation in fertility among the states reflect variations in age of marriage which in turn appears to be related to urbanization and education. The most interesting question arising from the data is why are the patterns of fertility within marriages in all of the countries with the exception of Bahrain so similar? The high levels of marital fertility across the life course appear to be inconsistent with the levels of contraceptive use reported in some countries, particularly Kuwait. Examination of birth intervals might resolve the seeming inconsistency, but related to the accuracy of timing of events may be insurmountable.

among married women, particularly older married women who have already had several births. The effect of the pro-natal stance of Oman is difficult to determine because there has been insufficient development of those factors normally associated with a decline in fertility. If there is one country within the region which represents the classical image of the Middle East it is Oman with its high proportion of married women, early age of marriage for women, and high fertility.

One cannot argue in the case of Saudi Arabia that its pro-natalist policy and supporting financial incentives have worked, because contraceptive are prohibited. However, the increasing education of females is having an effect reflected in a rising age at marriage, and as a consequence the overall, total fertility rate is lower than it probably was in the past.

The GCHS surveys will not result in general agreement on what the actual rates of fertility are in the six countries covered by the surveys. Questions are raised within several of the reports regarding data problems, particularly, with respect to retrospective data. Avoiding the issue of using the data to develop trends, to what degree do the estimates of current, or recent, fertility agree with other published estimates?

There is less variance among the estimates of the total fertility rate for the two countries with the highest fertility and the least amount of previous published information: Oman and Saudi Arabia. The GCHS figures for the total fertility rates are close to those of ESCWA as well as estimates made by the World Bank<sup>25</sup>. There is considerable variation for all other estimates. The greatest amount of disagreement is found in a comparison of the GCHS data for Kuwait with other sources. The ESCWA data from the *Statistical Abstract* is much lower than the estimate from ESCWA's recent *Population Situation Report*. The World Bank's estimate for Kuwait is close to those published in

in marital fertility rates late in the life cycle. The Oman report includes data on contraceptive use, and not surprisingly it is close to nil.

Family planning data are also available for Kuwait, and the reported statistics on contraceptive use are not reflected in the marital fertility patterns. The proportion of ever married women reporting current use of contraceptives is 29.6 percent for ages 20-24, 34.4 percent for ages 25-29, 47.2 percent for ages 30-34, and the proportions then decline with increasing age. Very few women in Kuwait report surgical sterilization, and very few report the use of long term methods such as the IUD. The majority of users report the use of the pill, and it may well be that it is used primarily to maintain a traditional, moderately long birth interval while reducing the length and intensity of breastfeeding. At the aggregate level the use of contraception does not indicate a general fertility decline within marriages in Kuwait, but there is some evidence that fertility within marriages is related to urban residence and education. Control by urban educated women who might use contraception is not sufficient at this time to result in any clear reduction in the patterns of childbearing within marriages. Consequently one might conclude that the pronatalist policy of Kuwait implemented with marriage and childbearing financial incentives has maintained quite high levels of fertility within marriages.

*The judgement on the effects of policy in the other countries remains somewhat mixed.* Bahrain with no expressed pro-fertility policy has experienced a dramatic decline of fertility within marriages. Qatar and the Emirates while committed to high levels of fertility have allowed access to a wide range of contraceptive techniques, and the result has been some decline of fertility

Much of the difference may be associated with variations in age at marriage, and delayed marriage appears to play a particularly important role in Qatar. Each of the reports refers to sharp increases in the age at marriage as an explanation for recent declines in fertility rates.

Age of marriage is clearly linked to other factors associated with declining fertility such as urbanization and education. Although the published reports do not provide the data necessary for a multi-variate analysis to separate the independent effects of nuptiality, urbanization, and education, the published tables for those countries reporting the data indicate differences in age at marriage by rural and urban residence and education. A partial control for nuptiality is available through the examination of marital age specific fertility rates, and again, where the data are available there are differences in the pace of childbearing within marriages, in the high fertility countries (Oman and Saudi Arabia) as well as Kuwait.

In addition to the effects of marriage on fertility within the region, it is evident that there is increased contraceptive utilization by married women in selected countries. Unfortunately data on contraceptive use is not available in all reports. What is available indicates that a very high rate of contraceptive use is found among women in Bahrain, and use begins at an early age and following the birth of the first child. Such a pattern of use is reflected in the low levels of marital fertility across all ages for the married women of Bahrain. Contraceptive use is much lower in the case of Qatar, but it is interesting that 19.7 percent of the women reporting current "use" of a modern contraceptive report surgical sterilization. Because sterilization normally occurs later in life after the birth of a number of children, that statistic accounts in part for the sharp drop off

In providing this important information the GCC countries have also provided much information on marriage and childbearing.

Although the surveys may not completely represent the entire populations in each of the countries, at the outset of this paper it was argued that the emphasis on identification of women eligible for the individual interview may have resulted in quite a complete enumeration of ever-married women in the childbearing years of life. In the case of Oman, however, two pieces of information suggest that some women in the age groups 15 through 49 may not have been enumerated. The sex ratios for these age groups are unusually high, and the proportion of ever married women is somewhat higher than one finds in other Islamic societies where marriage is universal. If some women were not enumerated in Oman, these are likely to have been unmarried women, and therefore the age specific and total fertility rates may be biased upwards by a small amount. Therefore the argument that the total fertility rate of Oman might be too high by 9 percent is reasonable. The omission of unmarried women would not, however, influence the marital age specific fertility rates which are very close to Saudi Arabia which has the highest marital total fertility rate. Although Oman's economic growth and economic development occurred later than in other Gulf countries, another explanation has been suggested by Christine Eickelman who argues that informal pressures to produce children *frequently* were identified in her anthropological studies of fertility behavior in Oman.<sup>24</sup>

In contrast with the high fertility rates of Oman and Saudi Arabia, there is a considerable range of total and marital total fertility rates within the region with the lowest rates in Bahrain.

difference in the over all fertility rates between urban and rural populations. TFR is 3.68 for urban Bahraini women and 5.21 for rural Bahraini women, and the figures, respectively for the other country are 5.3, 7.05 (semi-urban), and 9.11 for Oman, 6.07, 6.81 for Saudi Arabia, and 4.59, 8.25 for the United Arab Emirates. In the case of the marital total fertility rates, the differences are 6.8 versus 8.3 in Bahrain, 7.15 versus 8.26 in Saudi Arabia and 6.38 versus 9.09 in the United Arab Emirates.

Total fertility rates by literacy status are available for Kuwait, Oman, and the United Arab Emirates, and marital total fertility rates for Kuwait and the United Arab Emirates. The TFR differences for illiterate women versus literate women are, 8.55 versus 5.40 in Kuwait, 9.90 versus 4.99 in Oman, and 8.1 versus 4.58 in the United Arab Emirates. Eliminating differences in marriage, the marital total fertility rate for illiterate women in Kuwait, 10.6, approximates the level of the 19th century U.S. frontier population cited above. The value for literate Kuwaiti married women is also quite high 8.33. In the United Arab Emirates the marital total fertility rate for illiterate women is 7.85 and for literate women 6.15.

### ***SUMMARY AND CONCLUSIONS***

The GCHS surveys represent an important statistical achievement. Under difficult conditions in some countries, comparable surveys were completed at about the same time in each of the six countries. These surveys should prove to be very useful for policy makers in the countries concerned, not because of what has been reported in this paper, but what was, in point of fact, the major focus of the surveys, infant and child mortality, morbidity and health practices.

value the great the relative reduction of overall fertility because of differences in proportions married by age.

Table 4 About Here

The indexes simply confirm what would be expected on the basis of the data presented in Figure 4. Delay in age at marriage results in a proportionately greater reduction in fertility in Qatar, then Bahrain, followed by the United Arab Emirates. The very early age at marriage in Oman and its universality across the childbearing years of life indicate that there has been little impact on overall fertility levels as a result of any changes in nuptiality. The similar index values for age groups 15-49 for Kuwait and Saudi Arabia are also consistent with the patterns indicated in Figure 2 of proportions married by age.

***DIFFERENTIAL FERTILITY***

Earlier in this paper, it was indicated that because of the size of the samples and the distributions of the population by education in most countries, or rural versus urban residence in the cases of Kuwait and Qatar, the GCHS reports provide few opportunities to determine the degree to which typical measures of social and economic change are related to fertility differences. Because such data are not available for all countries, this section of the paper simply summarizes the available data without detailed tabular presentations.

Age specific fertility rates (and thus total fertility rates) for urban and rural women are reported for Bahrain, Oman, Saudi Arabia, and the United Arab Emirates, and marital fertility rates for Bahrain, Saudi Arabia, and the United Arab Emirates. In each case there is a substantial



age. Before doing so, it is useful to demonstrate that there are non-trivial differences in proportions married by age. Figure 2 contains a graphic display of the proportions currently married between ages 10-14 and 70 plus. Women in Bahrain, Qatar, and the United Arab Emirates all marry later than women in Kuwait, Saudi Arabia and Oman. The Omani women show a very distinctive early age of marriage, but they peak at about the same levels as the women of Kuwait and Saudi Arabia.<sup>21</sup> In the peak childbearing years, ages 20-24 and 25-29, there are however substantial differences in the proportions of currently married women between the high fertility and low fertility countries as measured by the total fertility rate.

(Figure 2 About Here)

The variations evident in Figure 2 are reflected in the estimated mean age of marriage (the singulate mean age at marriage<sup>22</sup>): 25.4 for females in Bahrain, 25.1 for females in Qatar, 23.0 for females in the United Arab Emirates, 22.1 in Saudi Arabia and 21.7 in Kuwait. The figure for Kuwait, however, masks major differences by levels of education. The singulate mean age at marriage for illiterate women in Kuwait is 19.3 years, but 23.6 years for those with secondary and higher levels of education.

A more precise means of estimating the overall effect of variations in nuptiality is through the use of a form of standardization to control for differences in proportions married by age. One method is John Bongaart's Cm index, and it has a simple, intuitive interpretation.<sup>23</sup> The value of Cm would be unity (1) if 100 percent of the women were married in each of the age groups 15-19 through 45-49, and if the observed marital age specific fertility rates obtained. The lower the

than the rate at age 25-29. In the case of Saudi Arabia there is very little difference, and this suggests an undercount of births to women age 20-24. If young Saudi women experienced a higher rate of infant deaths than women at other ages, some births followed by an early death may not have been reported. Similarly, the marital age specific fertility rates for ages 20-24 and 25-29 are the same in Qatar and the marital age specific fertility rate for age 15-19 is much too high for the value of the age group 20-24. Because of the small sample size of the Qatari women compounded by the small number of women married at early ages in Qatar, shown below, misreporting of a small number of births will produce this atypical pattern.

(Figure 1 About Here)

Except for the low fertility of Bahrain and the apparant data errors for Qatar and Saudi Arabia, the patterns are relatively similar until age 30-34. After that there is a relatively rapid falling off of the fertility rates in Qatar and the United Arab Emirates until the very oldest age where numbers and rates are very small. A possible explanation is that while Bahraini women limit fertility across the life span, women in Qatar and the United Arab Emirates limit fertility later in life, after a given number of children have been born. There is, however, little evidence of fertility limitation within marriages in Kuwait, Oman, and Saudi Arabia.

#### ***MARRIAGE AND FERTILITY***

Given the form in which the data have been published one cannot do much analysis of the data. However, by using the percentages and the original population distributions calculated in Table 3, it is possible to estimate the effect on fertility of differences in proportions married by

Bahrain continues to have the lowest marital total fertility rate (5.87), Saudi Arabia continues to be very high (7.83) with Kuwait and Oman near the same level (7.43 and 7.76). Once the young and perhaps quite small age 15-19 group is eliminated, Qatar (6.91) falls below the Emirates (7.22).

It is quite clear that how one measures fertility makes a difference. Only Bahrain stands out as an exception with the lowest fertility rate for all measures followed by Qatar (at least for the MTFR rate for ages 20-49.) Oman is consistently a high fertility country. For Kuwait, Saudi Arabia, and the United Arab Emirates, controlling for marriage becomes very important. For all women (TFR) only Oman stands out as having particularly high fertility. Marital fertility is very high and approximately the same in Kuwait, Oman, Qatar, and Saudi Arabia. Marriage seems particularly critical in the case of Qatar. The overall marital total fertility rate in Qatar is nearly twice as high as the total fertility rate: 9.15 versus 4.49.

Another picture of the relative differences in marital age specific fertility rates is presented in Figure 1. Typically the lowest line, representing the lowest levels of fertility, is Bahrain. Relative to the other five populations, Bahraini women have low levels of fertility at most ages. The solid dark line represents Saudi Arabia and except for the anomalous 15-19 age group and 20-24 age group, Saudi Arabian women tend to represent the highest rates of fertility. However, there is very little difference among the curves representing the marital fertility patterns of women in Kuwait, Oman and Saudi Arabia. It is interesting that the marital age specific fertility rate for Saudi Arabian women at age 20-24 is as low as it is because that rate is normally higher

calculation of the age specific fertility rates and the derived total fertility rates.

#### ***FERTILITY LEVELS AMONG THE GULF STATES***

In Table 4, we present the reported age specific fertility rates, total fertility rates, marital age specific fertility rate and marital total fertility rates for each of the countries.<sup>20</sup> The data indicate considerable variation in levels of fertility among the six countries. The highest total fertility rate is 7.84 for Oman. More than one child less is reported for Kuwait and Saudi Arabia, 6.5. The United Arab Emirate rates are slightly below 6, but the rates in both Bahrain and Qatar are quite low, 4.19 and 4.49 respectively. Restricting the analysis to the childbearing experience of married women only, the variability is reduced.

(Table 4 About Here)

Two summary figures are presented, the marital total fertility rate summed across all ages and summed across age 20 through 49, that is excluding the age group 15 to 19. In many cases a small number of women married between 15-19 will distort the overall fertility pattern, but it is an important group where a significant proportion of women marry and have a first child under age 20.

Consider first the total marital fertility rate summed over all ages. The picture is quite different from the pattern described by the total fertility rates. Fertility within marriages is very high among four states: Kuwait, Oman, Qatar, and Saudi Arabia--all with values above 9. The rate for the United Arab Emirates falls just below nine while the rate for Bahrain is again the lowest, roughly two children below the four highest countries. Eliminating the youngest group,

the childbearing years of life around 1955. It is clear that these older women married at earlier ages than women age, say, 15-19 or 20-24 at the time of the survey. The difference is easily illustrated in the case of Qatar. Of the women age 45-49 at the time of the survey, 40.1 percent reported having been married before the age of 15. This remarkably high percentage falls for each young age group as follows: 40-44, 38.4 percent; 35-39, 35.5 percent, 30-34, 25.3 percent; 25-29, 10.7 percent, 20-24, 5.2 percent; and 1.1 percent only for women 15 to 19. By contrasting the cumulative fertility of women 40-49 at the time of the survey with a rate based upon the recent experience of both married and unmarried women from 15-19 through 45-49, a serious misinterpretation of the data is made.

Each of the estimates may be in error to some extent, but in this paper the presentation will be restricted to fertility measures which are based on the pregnancy history section of the questionnaire. There are two reasons for this decision. First, the children ever-born section requires women to provide a precise numerical answer, even though there is a sequence of questions on numbers of boys and girls alive and dead, living with or not living in the household of the mother. Illiterate women may be less likely to provide the correct numerical answer when asked these direct question. Second, the pregnancy history technique with its structured design leads a woman through her entire history of childbearing, sequentially, providing a systematic guide to single events--births. Although the dates of the births may misplaced by the less educated respondents, the actual events taken in order may be more accurate and recent events are more likely to be remembered. It is the events just prior to the survey which provide the basis for the

to re-calculate the current total fertility rates.<sup>19</sup> In many cases this exercise yielded rates which were judged to be implausible.

The procedures described above represents an unfortunate misunderstanding of the data as evidenced by other populations. For example, although it is sometimes difficult to find independent sources of fertility rates which provide multiple measures of fertility, the analysis of a set of computerized genealogical records representing a pronatal, high fertility population settling the Western United States frontier in the 19th century provides such information. Those records clearly illustrate the variance between period total fertility rates and the children ever born measure. In the period 1885-89, the marital total fertility rate for this population was 11.15, higher than any of the Gulf countries as will be seen below. The value of the CEB measure for women who would have been 45-49 in 1885-89 was only 7.9. In this case, the fact that the marital total fertility was so much high than the CEB measure was due to the fact that the age of marriage had been declining across some of the periods where there was an overlap. It would have been wrong to argue that the marital total fertility rate for this population was 41 percent too high.

There are good reasons why the measures should not correspond. The total fertility rate for current/recent fertility is based on the childbearing experience of a synthetic cohort of women. The age specific fertility rates refer to the experience immediately preceeding the interview of women between the ages of 15 and 49 at the time of the survey. CEB at age 40-49 represents the experience of a common, *surviving*, 10 year birth cohort of women, the oldest of whom entered

measures reported below. If some adult females were undercounted, there are implications which will be discussed subsequently. However, the relatively large number of children and the generally balanced sex ratios among the young suggest one might have a reasonable degree of confidence in *some* of the fertility measures reported in the following section.

The word *some* was purposefully emphasized in the previous sentence. In some cases it is not possible to compare all of the countries on each of the fertility measures reported, because the number of cases becomes very small when cross classified by variables such as education. This is clearly the case in Qatar for the national population. In addition, the reports contain two separate estimates of fertility based upon two separate sets of questions. One is a set of questions on children ever born or cumulative fertility, and males and females ever born, dead and if living, residing or not residing in the household of the mother at the time of the interview. A second source of data is the pregnancy history technique which yields data on current fertility levels as well as retrospective rates of fertility, the latter of which appear to be somewhat suspect.

It is unfortunate that each report expresses concern with the validity of the fertility data because of a lack of correspondence between the cumulative fertility measure (CEB) at ages 40-49 and the total fertility rate. Using the number of children ever born for women age 40-49, it is reported that the total fertility rate calculated from the pregnancy history data is 40 percent too low in Bahrain, 17 percent in Kuwait, 38 percent in Qatar, 24 percent in Saudi Arabia and 21 percent in the United Arab Emirates. The total fertility rate in Oman on the other hand is judged to be too high by 9 percent. Consequently for each country an estimation technique was employed

deficient the out-migration of adult males does not appear to be a plausible explanation.<sup>16</sup> Another explanation is that there may be a fairly high number of polygynous marriages with non-native women who are then counted as part of the household.<sup>17</sup> The Kuwait report includes the statement, "The trend toward mixed marriages and subsequent naturalization has led to an increase in the number of Kuwaiti women in ages 20-34 years."<sup>18</sup> However as noted above particular emphasis was placed on the identification of ever-married women under the age of fifty and young children. Placing stress on the identification of specific categories of individuals may have resulted in a more complete count of young children and married women to the exclusion of some adult males.

At older ages, above 50, there is a surplus of males, but the sex ratios are erratic because of the small number of cases in these age groups and preferential reporting of some ages. There is clearly, however, a deficit of females at the older ages. It would appear that while women in the childbearing years of life might have been completely enumerated, with the possible exception of Oman, older females were often not reported. Males in their 20s and 30s might not have been counted, but older males appear to have been more fully identified.

There are problems with the data, but the coverage of married women may be generally complete, and that is critical for the study of fertility. However, the fact that the proportion under the age of 15 is so high in Kuwait, Oman, and probably Saudi Arabia lends support to the argument that some adults may have been missed in the survey of household members. If the adults who are not enumerated are males or older females, there will be no impact on the fertility



proportion of children under the age of 15. In Kuwait 53.3 percent of the population was under age 15, 51.7 percent in Oman, 50 percent in Saudi Arabia, 46.6 percent in the United Arab Emirates, 39.9 percent in Bahrain, and 36.3 percent in Qatar. A high proportion of young individuals is consistent with high levels of fertility, and the percentage differences suggest, at first glance, major fertility differences. However, because vital statistics reports from Kuwait indicate some decline in fertility the fact that Kuwait has the highest proportion of young people is surprising in spite of its quite low level of infant and child mortality. The data suggest that there may have been some undercounting of older individuals. In addition, the high masculinity ratios in ages 25 through 49 in Oman indicates that there might have been some underreporting of females. The relatively small number of males 15 to 24 in Oman might also indicate a shifting of individuals from one age group to another, contributing to these differences

The overall ratios of males to females indicates relatively balanced populations, although the overall sex ratio in Oman seems to be too high and the overall sex ratio for the United Arab Emirates seems to be quite low. The sex ratios for the young appear plausible in general, although there is evidence of age heaping and shifting of populations from one age groups to another.

During the childbearing years of life, there is a surplus of females in each of the countries with the exception of Oman. The phenomena appears in many other reports for several of these countries, but there is no satisfactory explanation in the literature other than to suggest it may be due to migration of males for education or work. Although a number of males from these countries pursue advanced education abroad, given the fact that most of the countries are labor

Saudi Arabia the nomadic population was excluded although it is estimated to represent only five percent of the population. Other problems may have been encountered elsewhere. In Bahrain a procedure to be implemented in the field had to be developed to replace non-Bahraini households with Bahraini households.

More potentially serious than sampling problems is the fact that for all of the countries covered, the level of education is low for females who provided the responses to the individual questionnaire.<sup>14</sup> An illiterate woman might not remember dates of her birth, marriage, and births dates of children born some years before the survey. Consistent with procedures developed for use in the Demographic and Health Surveys, interviewers were instructed (and trained) to probe in some detail to secure the most accurate and "best" information on these critical items of information. If dates were missing or incomplete, coding procedures--both manual and automatic--were employed to estimate dates. Consequently the published reports indicate a degree of completeness and accuracy which may undeserved.<sup>15</sup>

A starting point for an initial assessment of the survey data is an examination of the age and sex distribution of the population. Table 2 presents the calculated number of individuals by age and sex as well as the ratio of males to 100 females (the sex ratio) for each age group. Because the percentages from which the numbers were calculated are rounded, small variations become more important as the size of the population declines among the older age groups.

Table 2 About Here

A striking feature of the age and sex distribution is the very high or relatively high

a detailed individual interview covering marriage, childbearing, infant and child mortality, child care, and health of the children. Table 2 presents a summary of the dates when the field work was undertaken, the number of households selected in the sample, the number of households for which interviews were completed, the number of women eligible to be interviewed, and the number of children in the woman's family for whom detailed information was secured on health and health care. The important feature of the table is the high proportion of eligible women for whom interviews were completed.

Table 2 About Here

#### *QUALITY OF THE DATA*

Several of the countries covered by the GCHS surveys have well developed statistical systems which have produced a range of high quality statistics represented by regular, periodic censuses and seemingly reliable vital statistics reports. These include Bahrain and Kuwait especially and Qatar and the United Arab Emirates to a lesser degree. Sharply contrasting with the first group of countries is Oman where there had not been, at the time of the GCHS survey, a census. In Saudi Arabia, there have been censuses, but little is known about them. The absence of well established statistical systems may have influenced the representative nature of the samples employed because of differences in the types of materials (earlier censuses, household lists and maps for example) which could be used as the reference system (sampling frame) for selecting the household sample. For example, in Oman part of the country was unmapped and separate sampling procedures were used for the mapped and unmapped sections of the county. In

published reports is problematic. With the exception of a few tables, no numbers are presented, only percentages or rates. Numbers are available for the description of the sample, and the total number of males and females, separately and combined. Each of the reports reflects on issues of data quality and each contains the same statement that evaluation studies of the age and sex distribution of the population have been made and are in the process of being published.

#### ***BACKGROUND TO THE SURVEYS***

The Gulf Child and Health Surveys (GCHS hereafter) were originated<sup>11</sup> in 1986 by the GCC Council of Ministries of Health.<sup>12</sup> These surveys have their historical roots in the Demographic and Health Surveys (DHS) initiated as a follow-up to the World Fertility Surveys (WFS). WFS demonstrated the feasibility of conducting large scale demographic surveys in a number of countries where no such studies had previously been conducted. The DHS surveys represent a logical follow-up to the WFS surveys, but they were expanded in scope to collect additional information with particular emphasis on the health of children. While independent of the DHS organization, the GCHS surveys are consistent with the methodology and structure of the DHS surveys. The questionnaires employed for both the household survey and the interview with ever-married women are basically the same as employed in the DHS studies.<sup>13</sup>

Each survey involved two stages. The first was a survey of residents of a random sample of households. Limited information was collected, and a special effort was made to identify women who had ever been married and were under the age of 50 as well as children under the age of five living in the household. The women represented the eligible sample for the second phase,

statement to the GCHS survey noted, "the high fertility of Qatar is desired and encouraged by the State's pro-natalist policies."<sup>9</sup> Other countries such as Saudi have "no specific statement concerning policies in reference to size and growth", but maternity benefits and family allowances are provided.<sup>10</sup> The pro-growth policies, both explicit and implicit, represent a rational commitment to the growth of national populations in countries which have been heavily dependent upon expatriate populations to fuel social and economic development using national resources. Because of the rapid rate of social and economic development in these countries, they have also experienced a number of changes typically associated with declining fertility. Therefore they provide an unusual opportunity to determine whether pronatalist policies have been effective in maintaining presumably traditional high levels of fertility. Fortunately data have become available to explore this issue.

This paper uses the six recently published reports from the GCHS surveys to examine fertility differences among and within the six states. The background to these surveys is provided in the first section of the paper. The second section provides an overall assessment of the general quality of the data particularly as it relates to the measurement of fertility. The third part of the papers provides a description of the major differences in fertility levels and patterns, and an effort is made to explain the reported variations. The final section relates the reported findings to the patterns of social and economic change as well as the explicit and implicit population policies of the six countries.

At the outset it is essential to point out that an evaluation of the data sets based on the

West Asia reports the total fertility rate for Bahrain for 1985-90 as 4.08 in its *Statistical Abstract*, but another unit within the same organization in another report published in the same year reports the total fertility rate to be 5.8, roughly 25 percent higher.<sup>5</sup> There are also major differences for Kuwait and the United Arab Emirates, and these three countries, along with Qatar for which there is a smaller, but important difference, are the GULF countries with the best developed statistical systems.<sup>6</sup> The two countries for which there is much less information available, Oman and Saudi Arabia, are the only ones for which the two publications appear to agree. Fortunately, new data are becoming available which might clarify the levels and differences in fertility in the Gulf region.

(Table 1 About Here)

Recently six comparable surveys were conducted in Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and the United Arab Emirates.<sup>7</sup> The focus of these surveys was child health, but they provide extensive data on fertility. Consequently now there is comparable set of data for the Gulf countries collected at about the same time using basically the same methodology.

These countries are of particular interest in the ongoing debate regarding population growth and population policies. In contrast to many areas of the world where fertility limitation policies have been adopted these countries, with the exception of Bahrain,<sup>8</sup> implicitly or explicitly support high fertility. However, contraceptives are available through the private sector and in some cases government supported medical facilities in some of the countries. For example, in Qatar a significant proportion of currently married women use contraceptives, but an introductory

In past years many studies that reference the population of the Middle East cite the high fertility of the populations of the region as a common characteristic.<sup>1</sup> Eickelman has captured the essence of the literature, writing, ". . . demographers attribute the continuing high birth rates in Middle Eastern countries to the persistence of a fertility pattern no longer curbed by a high infant and child mortality rates; some even characterized the incidence of high birth rates as a general characteristic of Islamic societies . . .".<sup>2</sup> In very few cases were such statements based on solid demographic data, but rather on crude estimates or conjecture because of the lack of censuses, vital statistics, or other appropriate data sources.

During the past two decades, however, the availability of national censuses and a wide range of surveys<sup>3</sup> provided fairly reliable data for many countries of the region. These data have demonstrated not uniformity but rather substantial variations and often a quite significant declines in fertility rates in some countries of the region. Nevertheless uncertainty persists for some countries because information remains limited. For example, Oman's first national census was scheduled only for 1993, and according to the Economic and Social Commission for West Asia the Kingdom of Saudi Arabia has introduced a vital registration system for births and deaths but no materials have been published in an accessible form.<sup>4</sup>

Because of uncertainty regarding demographic data, different rates continue to be published, often by the same organization. The point is illustrated in Table 1 which reports the total fertility rates (roughly the average number of children born at the end of the childbearing years of life at current rates) for the GULF countries. The Economic and Social Commission for

## PREFACE

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CDC Director

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MARRIAGE AND FERTILITY IN THE  
GULF REGION:  
THE IMPACT OF PRO-FAMILY,  
PRO-NATAL POLICIES .

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